

**PORT OF SEATTLE**  
**MEMORANDUM**

**COMMISSION AGENDA**  
**ACTION ITEM**

**Item No.** 4a  
**Date of Meeting** November 4, 2014

**DATE:** October 27, 2014  
**TO:** Theodore J. Fick, Chief Executive Officer  
**FROM:** Dave Soike, Director, Aviation Facilities and Capital Program  
Wayne Grotheer, Director, Aviation Project Management Group  
**SUBJECT:** Domestic Piping Branch Replacement (CIP #800657)

<b>Amount of This Request:</b>	\$558,000	<b>Source of Funds:</b>	Airport Development Fund (ADF)
<b>Est. Total Project Cost:</b>	\$1,950,000		
<b>Est. State and Local Taxes:</b>	\$115,000		

**ACTION REQUESTED**

Request Commission authorization for the Chief Executive Officer to design and prepare construction bid documents for the Domestic Piping Branch Replacement project at Seattle-Tacoma International Airport. This authorization is for \$558,000 of a total estimated project cost of \$1,950,000.

**SYNOPSIS**

This authorization would allow for the design required to replace aging domestic water pipes and associated valves in the Airport's Main Terminal.

**BACKGROUND**

There are four domestic water piping branches and manifolds in the Main Terminal, one serving each mechanical room (rooms 1-4). These piping branches are approximately 43 years old. During recent maintenance activities, the piping was disassembled. The pipes were found to be severely corroded, with the interior of pipes and fittings nearly completely plugged with rust deposits. Also, many of the valves no longer function, leaving the Port vulnerable to a water shutdown in the event of failure.

**PROJECT JUSTIFICATION AND DETAILS**

This request would authorize design work for the replacement of the water pipes prior to failure. Water pipes corrode through age and use. These pipes are over 40 years old and show considerable corrosion. The disruption of domestic water pipe failure would be unacceptable to airport operations.

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Design will be performed internally by Port Engineering Services and existing indefinite delivery, indefinite quantity agreements (IDIQs) for specialized design input.

### ***Project Objectives***

- Replace existing domestic water piping between the water main in the utilidor through the reducing stations in Mechanical Rooms 1-4.
- Vastly reduce risk of piping failure that would cause domestic water disruption to large portions of the Airport.
- Evaluate existing pipe sizes based on current demands and planned expansions and redesign using appropriate sizing.
- Design and integrate metering into the existing Direct Digital Control System.
- Replace existing valves that enable the Airport to shut down water in the event of an emergency or for future work shutdowns.
- Minimize water supply disruption by performing root valve replacements overnight and back feeding each mechanical room with water during construction to avoid outages.

### ***Scope of Work***

- Replace four 6” and 8” domestic piping branches from the 12” main in the utilidor up to and including the reducing stations located near the mechanical rooms in the Main Terminal; and
- Perform necessary work to keep the domestic water system functional through the construction period.

### ***Schedule***

Project Notebook Approval	September 2014
Commission Authorization for Design	November 2014
Design Start	November 2014
Design Completion	April 2015
Commission Authorization for Construction	April 2015
Construction	October 2015 through January 2016

## **FINANCIAL IMPLICATIONS**

<b><i>Budget/Authorization Summary</i></b>	<b>Capital</b>	<b>Expense</b>	<b>Total Project</b>
Original Budget	\$1,950,000	\$0	\$1,950,000
Previous Authorizations	\$0	\$0	\$0
Current request for authorization	\$558,000	\$0	\$558,000
Total Authorizations, including this request	\$558,000	\$0	\$558,000
Remaining budget to be authorized	\$1,392,000	\$0	\$1,392,000
Total Estimated Project Cost	\$1,950,000	\$0	\$1,950,000

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### ***Project Cost Breakdown***

	This Request	Total Project
Design	\$558,000	\$558,000
Construction	\$0	\$1,285,000
Sales Tax		\$115,000

### ***Budget Status and Source of Funds***

This project was included in the 2014-2018 capital budget and plan of finance with a budget of \$1,950,000. The funding source will be the Airport Development Fund.

### ***Financial Analysis and Summary***

<b>CIP Category</b>	Renewal/Enhancement
<b>Project Type</b>	Renewal and Replacement
<b>Risk adjusted discount rate</b>	N/A
<b>Key risk factors</b>	N/A
<b>Project cost for analysis</b>	\$1,950,000
<b>Business Unit (BU)</b>	Terminal cost center
<b>Effect on business performance</b>	NOI after depreciation will increase
<b>IRR/NPV</b>	N/A
<b>CPE Impact</b>	CPE will increase by \$.01 in 2017. This project was included in the business plan forecast.

## **STRATEGIES AND OBJECTIVES**

This project supports the Port's Century Agenda objective of meeting the region's air transportation needs at Sea-Tac Airport for the next 25 years. Maintaining our existing assets and infrastructure is necessary to meeting this objective.

### **TRIPLE BOTTOM LINE**

#### ***Economic Development***

This project will allow the Port to continue providing our Airport and concessions tenants with uninterrupted domestic water. Completion of this project will significantly reduce the chances of a domestic water outage, and also prevent the economic impacts of an emergency repair project and potential costs to tenants.

#### ***Environmental Responsibility***

This project will provide the opportunity to apply environmental sustainability principles primarily through the use of ductile iron pipe that has a high recycled content.

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### ***Community Benefits***

This project saves the Port the potential cost and operational impacts of a domestic water failure that could take several months to correct. Concessions and the traveling community will also benefit by maintaining an uninterrupted water supply.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

**Alternative 1)** – Do nothing. Valves are already partially plugged and do not function. A more significant failure is likely within the next two years. This is not the recommended alternative.

**Alternative 2)** – Perform complete replumbing of the entire main terminal. This option is prohibitively expensive and does not take advantage of the efficiencies gained by combining future plumbing repair into upcoming work that will occur in the same locations. This is not the recommended alternative.

**Alternative 3)** – Perform selective replacement where the problems are the worst - mechanical rooms 1-4. **This is the recommended alternative.**

## **ATTACHMENTS TO THIS REQUEST**

- None

## **PREVIOUS COMMISSION ACTIONS OR BRIEFINGS**

- None